AMENDMENTS

Claims 2-17 are pending.

Claims 6 and 8-10 have been amended.

Claims 11-17 have bee added.

Claim 1 has been cancelled.

Support for the amendments is found in the claims and specification (e.g., page 36, ln. 21, the Examples, and page 37), as originally filed.

No new matter is believed to have been added.

Applicants wish to thank the Examiner for the discussion on June 8, 2010. The Examiner indicated that amending the amount of an anionic surfactant to 8-50 wt.% without submitting any data would overcome the rejections over Sherry et al., Nakatsu et al., Behan et al., and Maksimoski et al. The rejection over Keys et al. and possible amendments and evidence for obviating the rejection were further discussed. The Examiner is of the opinion that in Keys et al., anionic and nonionic surfactants can be used interchangeably, and since 15%, 10-80%, 10-60%, and 10-40% of nonionic surfactants is used in a softening formulation for paper of Keys et al., the same amount of an anionic surfactant can be used instead of a nonionic surfactant. The Examiner requested showing that a substitution of nonionic surfactants for anionic surfactants does not produce an equivalent result.

REMARKS/ARGUMENTS

Conventional hair compositions generally have a pH in the neutral range and contain little acid (page 1 of the present specification). In recent years, hair compositions having a pH in the acidic range (e.g., pH 1-5) to impart various functions have been developed. Acidic hair compositions can have a peculiar acid smell. When fragrances are simply added to conventional hair compositions, the compositions' odor balance deteriorates. The inventors have found that a combination of a musk with one or more ingredients of a specific chemical

structure in particular proportions can mask the acidic smell and that such acidic hair compositions have excellent long-term stability (pages 1-2 of the specification; see also the Examples Tables 2 and 5-15).

Claims 6-9 are rejected under 35 U.S.C. 103(a) over Sherry et al., US 6,716,805, and claim 2 is rejected under 35 U.S.C. 103(a) over each Sherry et al. and Nakatsu et al., US 5,965,518. The rejections are traversed because Sherry et al. alone or in combination with Nakatsu et al. do not describe or suggest a liquid acidic hair cosmetic composition (e.g., cleansing composition) comprising 8-50 wt.% of at least one anionic surfactant and the claimed content of oil.

Sherry et al. describe a *hard surface* cleaning composition comprising various components, e.g., hydrophilic polymers; primary surfactants such as alkylpolysaccharides and non-ionic surfactants; optionally, organic solvents and anionic surfactants; carboxylic acids; odor control agents such as cyclodextrins and perfumes and many other ingredients. Col. 3-5 and col. 5-21. However, Sherry et al. do not describe a single specific composition comprising the claimed components, not to mention the claimed amount of the components.

Sherry et al. describe that the content of the optional anionic surfactants is 0.01-0.25 wt.% (col. 12, ln. 51-63) and a low level of surfactants is advantageous for overall result. Col. 11, ln. 40-55 and col. 12, ln. 66 to col. 13, ln.26.

Sherry et al. do <u>not</u> describe the content of paraffin (col. 17, ln. 36-39).

Thus, in Sherry et al., the content of the anionic surfactants is 0.01-0.25 wt.% which is outside of the claimed range, and an anionic surfactant is not even required in the Sherry et al. composition. Moreover, Sherry et al. explicitly suggest keeping a low level of surfactants because it provides an advantageous result. Thus, a skilled artisan would not have been motivated to go outside of the range of Sherry et al. because a higher content the anionic surfactant is disadvantageous.

Nakatsu et al. do not cure the deficiency of Sherry et al. and do not describe the content of an anionic surfactant and oil. Substituting Nakatsu et al. in the composition of Sherry et al. still does not produce the claimed acidic hair composition.

Thus, Nakatsu et al. and Sherry et al. do not make the claimed hair composition obvious. Applicants request that the rejections be withdrawn.

Claims 6-9 are rejected are rejected under 35 U.S.C. 103(a) over (i) Behan et al., US 5,334,581 and Maksimoski et al., US 4,983,383, or (ii) Behan et al., Maksimoski et al., and Nakatsu et al. The rejections are traversed because the combinations of these references do not describe or suggest a liquid acidic hair cosmetic composition (e.g., cleansing composition) comprising 8-50 wt.% of at least one anionic surfactant.

Behan et al. describe a personal care composition-emulsion (e.g., a hair conditioner) comprising 0.5-10 wt.% of fatty acids (e.g., mineral oil); 0.05-1 wt.% of perfume; 0.5-3 wt.% of an emulsifier (e.g., sodium lauryl ether sulphate which is an anionic surfactant), and various other components. Col. 8, ln. 37-54. In Example 19, referred to in the Official Action, 0.2 wt.% of citric acid is used in a hair conditioner. Behan et al. uses various musk and perfume components (col. 6 and a table in col. 9-10).

Behan et al. alone or in combination with Maksimoski et al., and Nakatsu et al. do not describe a liquid acidic hair cosmetic composition (e.g., cleansing composition) comprising 8-50 wt.% of at least one anionic surfactant. More specifically, Behan et al. describe a hair conditioner. However, the content of an anionic surfactant in conditioners is low. For example, Maksimoski et al. describe that for a shampoo, the level of a surfactant is high, e.g., 10-30%, while for a conditioner, the level is low, e.g., 0.2-3% (the same level of an anionic surfactant for a conditioner is described by Behan et al., col. 8, ln. 43-44). Thus, the amount

of an anionic surfactant in the *conditioner* of Behan et al. is low, while in the claimed composition, the content of the anionic surfactant is 8-50%.

Maksimoski et al. and Nakatsu et al. do not describe an acidic hair cleansing composition comprising 8-50% of the anionic surfactant.

Behan et al., Maksimoski et al., and Nakatsu et al. do not describe the claimed method of masking acidic odor.

Thus, Behan et al., Maksimoski et al., and Nakatsu et al. do not make the claimed hair composition and masking method obvious.

Applicants request that the rejections be withdrawn.

Claims 6-8 and 10 are rejected under 35 U.S.C. 103(a) over Keys et al., US 6,211,139. The rejection is traversed because Keys et al. do not describe the content of an anionic surfactant, an acidic hair cleansing composition (claims 11-13), the claimed pH, an acidic hair cleansing composition comprising silicone (as in claim 14), and the claimed method of masking acidic odor of an acidic hair cosmetic composition (claims 15-17).

Keys et al. describe a personal care composition comprising polyester amine compounds and a large variety of other components, e.g., anionic surfactant (col. 28-29); 0.01-5% of perfumes (col. 30-32); and 0.1-25 wt.% of oil (col. 6, ln. 64-67). *See* col. 7-41 for all components. Personal care surfactants are described in col. 28, ln. 35, *et seq*.

Keys et al. do <u>not</u> describe the content of an anionic surfactant used in personal care products (col. 28, ln. 35 to col. 29, ln.43). The personal care products of Keys et al. are skin and hair <u>conditioners</u> (col. 1, ln. 13-14 and Examples 27-31). The content of an anionic surfactant in conditioners is low. For example, Maksimoski et al. describe that for a shampoo, the level of a surfactant is high, e.g., 10-30%, while for a conditioner, the level is low, e.g., 0.2-3% (the same level of an anionic surfactant for a conditioner is described by Behan et al.,

col. 8, ln. 43-44). Thus, the amount of an anionic surfactant in the conditioner of Keys et al. is expected to be low (i.e., 0.2-3%), while in the claimed composition, the content of the anionic surfactant is 8-50%.

Keys et al. do not describe an acidic hair *cleansing* composition (claims 11-13), the claimed pH, an acidic hair cleansing composition comprising silicone (as in claim 14), and the claimed method of masking acidic odor of an acidic hair cosmetic composition (claims 15-17).

It appears that the Official Action has alleged that in Keys et al., anionic and nonionic surfactants can be used interchangeably (col. 4, ln. 25-28), and since 15%, 10-80%, 10-60%, and 10-40% of nonionic surfactants is used in a softening formulation for paper of Keys et al. (Examples 22-25), the same amount of an anionic surfactant can be used instead of a nonionic surfactant. Applicants respectfully disagree because a softening formulation for paper of Keys et al. comprising nonionic surfactants is not suitable for using as a hair cleansing composition and a nonionic surfactant cannot substitute an anionic surfactant in the claimed liquid acid hair composition.

(I) Applicants conducted additional experiments showing that a substitution of 8-50% of an anionic surfactant for a nonionic surfactant provides an inferior result. *See* the submitted Declarations.

Experimental Data

Each of the following compositions was prepared and then ranked as to ease of foaming, volume of foam, fineness of foam, smoothness of foam, smoothness upon rinsing off and ease of finger combing upon rinsing off.

Table A

	Formulation No.	Example 1	Comparative example 1
	Mixing Purpose	Claimed composition	Composition substituting

			nonionic surfactant for anionic surfactant
	Raw Material Name	act.%	act.%
	Sodium POE(2) alkyl ether sulfate	11.00	
	Sodium lauryl sulfate	5.000	
	Polyoxyethylene(5) lauryl ether		16.000
	Cocoyl monoethanolamide	1.000	1.000
	Myristyl alcohol	1.000	1.000
	Cetanol	0.500	0.500
	Ethylene glycol distearate	3.000	3.000
	Benzyl alcohol	0.500	0.500
	Cationized guar gum	0.300	0.300
	Cationized hydroxyethylcellulose	0.30	0.30
	Dimethicone	0.50	0.50
	Amodimethicone	0.10	0.10
	Purified glycerol	1.00	1.00
	Malic acid	0.75	0.75
	Lactic acid	0.10	0.10
	Sodium Chloride	0.20	0.20
	Sodium hydroxide	q.s. to pH below	q.s. to pH below
	Water	Balance	Balance
pH	3.7±0.1	3.73	3.69
Viscosity (mPa·s)	30°C	3800	379
measured by using Brookfield viscometer and Rotor No. 3 at 12 rpm			

Ranking method

The ranking test was performed by using tress weighing 20 g. Each of tress was preliminarily cleansed and then each of the composition was applied in an amount of 1.5 g followed by foaming and being rinsed off.

Ranking Standard

5: Very good
4: Good
3: Cannot said either
2: A little bad
1: Bad

Result

The comparative composition did not foam entirely and, therefore, the volume of foam was almost zero.

Ranking result

Table B

	Example 1	Comparative Example 1
Ease of foaming	4	2
Foam Volume	4	1
Fineness of foam	4	1
Smoothness of foam	4	2
Smoothness while rinsing	4	2
Ease of finger combing while rinsing	3	2

Thus, as shown in the table above, a substitution of 8-50% of an anionic surfactant for a nonionic surfactant provides an inferior result. Thus, the claimed acidic hair composition provides an unexpected result.

Also, a skilled artisan would not have been motivated to use a nonionic surfactant instead of an anionic surfactant with a reasonable expectation of success (e.g., ease of foaming, foam volume, fineness of foam, smoothness of foam, smoothness while rinsing, and ease of finger combing while rinsing) because anionic surfactant and nonionic surfactants are different chemicals and have different properties.

(II) Applicants also conducted experiments showing that the offensive odor of a cosmetic base is cause by low pH, a large amount of a surfactant and by the presence of silicones. *See* pages 1-2 of the present specification.

Regarding low pH, as shown in the attached experimental data of Table 1, the composition having pH of 5 (Test Example 3) has strong acidic odor, while the composition having pH of 6 (Test Example 4) does not have strong acidic odor.

Regarding surfactant, as shown in the attached experimental data of Table 1, the composition comprising 16 wt.% of the anionic surfactant (Test Example 1) has strong acidic odor, while the composition comprising 1.5 wt.% of the anionic surfactant (Test Example 2) does not have strong acidic odor.

Regarding silicones, as shown in the attached experimental data of Table 2 and Table 3, the composition comprising silicones (Test Example 1) contains a larger amount of fatty acids such as iso-valeric acid, n-butyric acid and hexanoic acid, which are known to have offensive odor caused by deterioration, as compared with the composition comprising no silicones (Test Example 5) after storage at 50°C for 2-week. The claimed acidic hair composition masks the offensive odor and has long-term stability.

A. In a first experiment, the compositions in Table 1 were prepared.

Table 1

(wt.%)	Test Example 1	Test Example 2	Test Example 3	Test Example 4
Sodium POE(2) lauryl ether sulfate	11	1	11	11
Sodium lauryl sulfate	5	0.5	5	5
Cationized guar gum	0.3	0.3	0.3	0.3
Citric acid	0	0	0	0
Malic acid	0.75	0.75	0.75	0.75
Lactic acid	0.1	0.1	0.1	0.1
Sodium chloride	0.2	0.2	0.2	0.2
Benzyl alcohol	0.5	0.5	0.5	0.5
Cocoyl monoethanolamide	1	1	1	1

Dimethicone (viscosity: 100,000 cps)	0.5	0.5	0.5	0.5
Amodimethicone	0.1	0.1	0.1	0.1
Myristyl alcohol	1	1	1	1
Cetanol	0.5	0.5	0.5	0.5
Ethylene glycol distearate	3	3	3	3
Cationized hydroxyethylcellulose	0.3	0.3	0.3	0.3
Glycerol	1	1	1	1
Sodium hydroxide	q.s. to pH below			
Deionized water	Balance	Balance	Balance	Balance
pH	4	4	5	6
Acidic odor	Strong	Little	Strong	Little

For each of the compositions, the odor was assessed by sniffing a head space of glass bottles with samples. 110-ml bottles were 9.5 cm tall with the 3.0 cm i.d. opening and 5.0 cm i.d. wide bodies. These bottles were checked for odor prior to the sniffing test. Fifty ml of a sample was placed in a bottle before putting the lid on. The bottles were allowed to return to room temperature for about 6 hours and then were opened and sniffed by a panel of 3 experts.

As shown by the results presented in Table 1, the compositions having a pH 5 (Test Example 3) has strong acidic odor, while the compositions having a pH 6 (Test Example 4) does not have strong acidic odor.

Also, as shown by the results presented in Table 1, the composition which contains 16 wt.% of an anionic surfactant (Test Example 1) has strong acidic odor, while the compositions comprising 1.5 wt.% of the anionic surfactant (Test Example 2) does not have strong acidic odor.

B. In a second experiment, the compositions of Table 2 were prepared.

Table 2

	Test Example 1	Test Example 5
	Weight%	Weight%
Sodium POE(2) alkyl ether sulfate	11.0	15.0
Sodium lauryl ether	5.0	0.0
Cationized guar gum	0.30	
Citric acid	0.00	0.5
Malic acid	0.75	
Lactic acid	0.10	
Sodium sulfate	0.00	1.0
Sodium chloride	0.20	
Benzyl alcohol	0.50	0.5
Cocoyl monoethanolamide	1.0	3.0
Dimethicone (viscosity: 100,000 cps)	0.5	
Amodimethicone	0.1	
Myristyl alcohol	1.0	
Cetanol	0.5	
Ethylene glycol distearate	3.0	2.0
Cationized hydroxyethyl cellulose	0.3	1.0
Glycerol	1	
Sodium hydroxide(48% aqueous solution, pH adjuster)	q.s. to pH 4	q.s. to pH 4
Deionized water	Balance	Balance
Total	100	100.0

Odor intensity and property after storage of 50 °C, 2-week	3.5	3.5
	increasing sweet and acidic odor	increasing sweet and acidic odor

For each of these compositions, the odor was assessed by the following method.

Fifty ml of a test sample was placed in one glass-bottle before putting the lid on. These 110-ml bottles were 9.5 cm tall with 3.0 cm i.d. opening and 5.0 cm i.d. wide bodies. The test samples placed in the closed glass bottles were stored for 2 weeks in constant-temperature chambers controlled at 0°C and 50°C, respectively. After the temperature of the

respective samples were allowed to return to room temperature 2 weeks later, the odor assessment was performed by sniffing head space of each glass bottle with a sample. The odor intensity from the sample stored at 50°C was ranked in comparison with the odor intensity from the sample stored at 0°C as a standard. The ranking was performed by a panel of 3 experts according to the standard below, and the average of their scores was indicated with 0.5 increments, while the unanimous odor property was desired by the same three panels.

Ranking Standard of Odor Intensity:

5: Substantially the same compared with the standard (the sample stored at 0°C).

4: Slightly changed compared with the standard.

3: Changed compared with the standard.

2: Obviously changed compared with the standard.

1: Pronouncedly changed compared with the standard.

As shown by the results presented in Table 2, the compositions of Test Examples 1 and Test Example 5 have the same odor intensity and increasing sweet and acidic odor after storage at 50°C for 2 weeks. In Table 2, the composition of Test Example 1 comprising silicones contains a larger amount of fatty acids such as iso-valeric acid, n-butyric acid and hexanoic acid, which are known to have offensive odor caused by deterioration, while the composition of Test Example 5, which does not comprise silicones, does not contain a large amount of fatty acids. However, the odor characteristics of the compositions of Test Example 1 and Test Examples 5 are similar after storage at 50°C for 2 weeks. Thus, the claimed acidic hair composition masks the offensive odor and has long-term stability.

The results are shown in Table 3 and the following chromatograms. The chromatograms were obtained by Solid Phase Microextraction at the following condition:

Analytical Method:

SPME (Supelco)

Fiber: Divenylbenzene/Carboxene/Polydimethylsiloxane (2 cm 50/30μm)

Incubation Temp: 40°C

Extraction Time: 100 min

Desorption Time: 10 min

Desorption Temp: 250°C

Instrument:

Gas Chromatograph: Agilent 6890

Mass Spectrometer: Agilent 5973 MSD

GLC Condition

Column: DB-WAX (J&W) length: 60 nm, Daim: 0.25 mm, Film: 0.25 μm

Flow (He) 0.8 mL/min

Injection Mode: Splitless (4 min)

Oven Temp:

Initial Temp: 40°C (Hold Time 4 min)

Rate 1: 6°C/min (Final Temp 1: 70°C)

Rate 2: 2°C/min (Final Temp 2: 240°C)

Mass Spectrometer:

Ionization Method: Electron Impact (70 eV)

Samples 1 and 2 are represented by the chromatograms after storing Test Example 1 containing silicones for 2 weeks at 5 and 50°C, respectively. Samples 3 and 4 are represented by the chromatograms after storing Test Example 5, which does not contain silicones, for 2 weeks at 5 and 50°C, respectively. The results of Table 3 and the following chromatograms show that after storing the samples at 5°C, Sample 3 has a similar or lower content of fatty

acids compared to Sample 1. After storing the compositions of Test Example 1 (Sample 2) and Test Example 5 (Sample 4) at 50°C for 2 weeks, Sample 4 has significantly greater content of fatty acids, which are known to have offensive odor caused by deterioration, compared to Sample 2. However, the odor characteristics of Sample 2 and Sample 4 are similar because of the masking effect of the claimed acidic hair composition, as shown in Table 2.

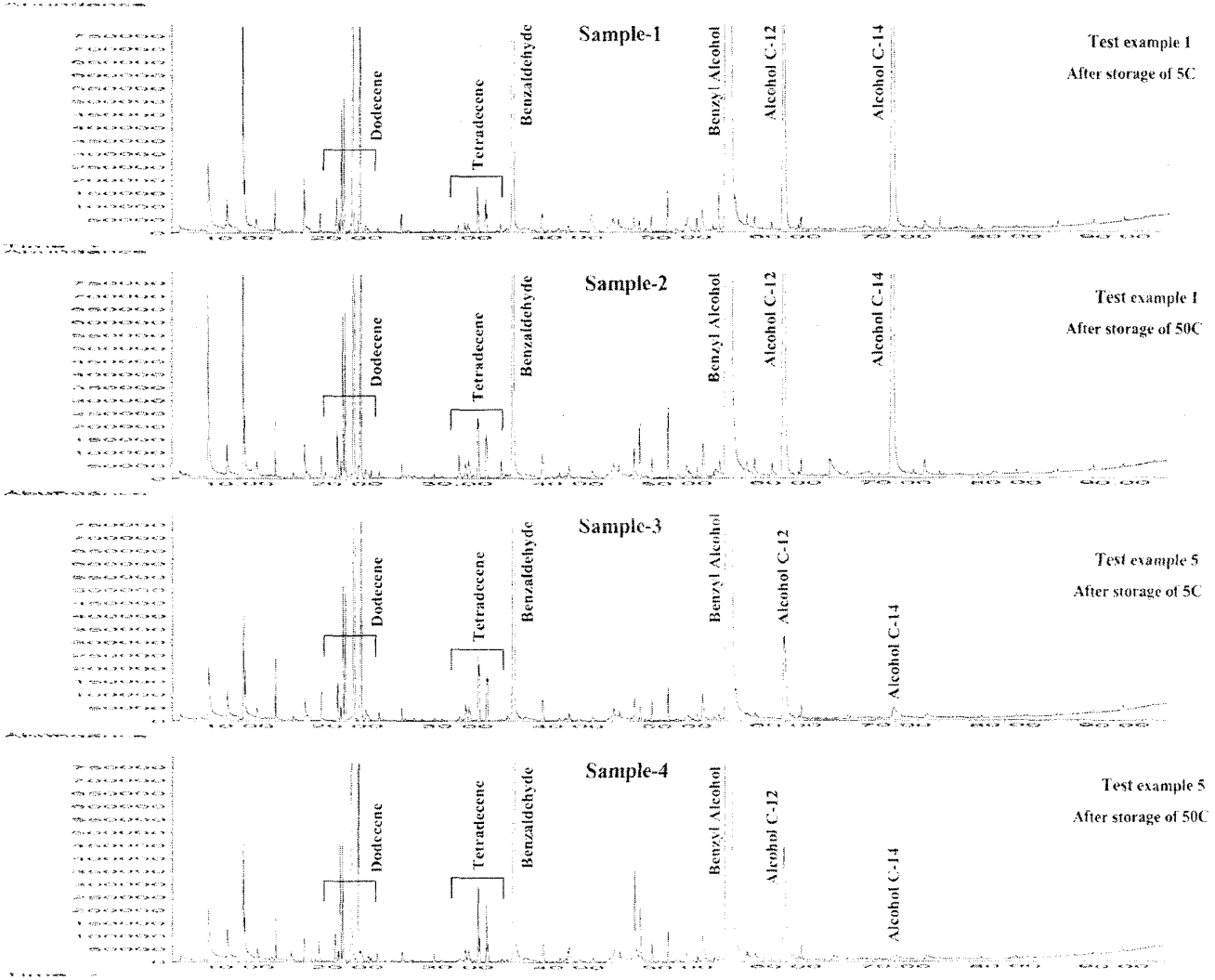
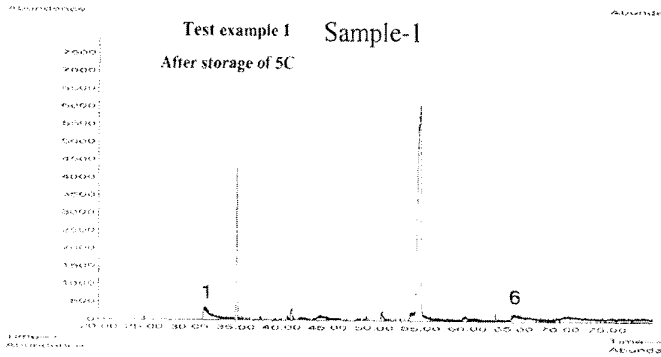
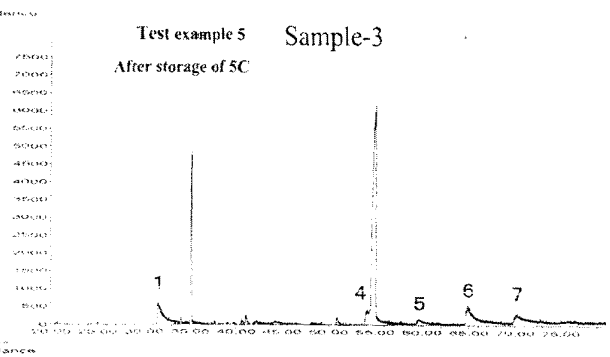
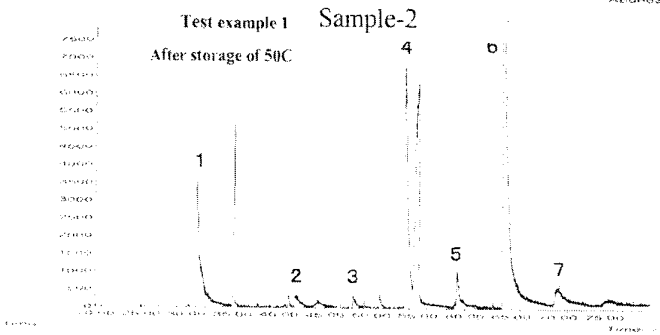

Sample-1
Dodecene
Tetradecene
Benzaldehyde
Benzyl Alcohol
Alcohol C-12
Alcohol C-14
Test example 1
After storage of 5C
Sample-2
Dodecene
Tetradecene
Benzaldehyde
Benzyl Alcohol
Alcohol C-12
Alcohol C-14
Test example 1
After storage of 50C
Sample-3
Dodecene
Tetradecene
Benzaldehyde
Benzyl Alcohol
Alcohol C-12
Alcohol C-14
Test example 5
After storage of 5C
Sample-4
Dodecene
Tetradecene
Benzaldehyde
Benzyl Alcohol
Alcohol C-12
Alcohol C-14
Test example 5
After storage of 50C

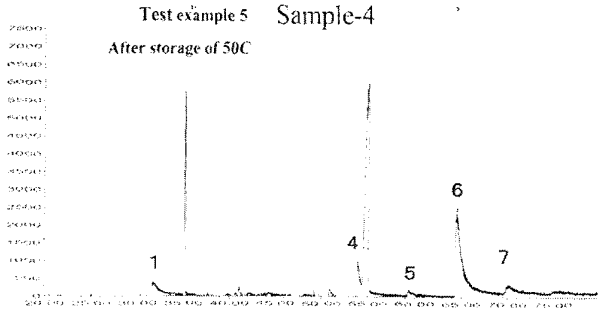
Table 3 Fatty Acid Amount (EX ion : M/Z=60)

No.	Fatty Acid	RT	Sample-1	Sample-2	Sample-3	Sample-4
1	Acetic Acid	31.153	116,340	88,805	217,762	169,607
2	n-Butyric Acid	41.886	-	96,440	-	-
3	n-Valeric Acid	48.068	-	69,189	-	-
4	Hexanoic Acid	53.689	-	1,260,532	90,130	226,030
5	Heptanoic Acid	59.284	-	138,875	34,935	47,006
6	Octanoic Acid	64.151	93,069	3,375,248	215,249	1,021,229
7	Nonanoic Acid	59.959	-	262,563	138,092	141,230









Thus, these experiments show that offensive odor of a cosmetic base is caused by the low pH, a large amount of surfactants and by the presence of silicones.

Thus, the claimed acidic hair cosmetic composition provides an unexpected result.

Keys et al. do not describe a hair acidic composition comprising the claimed amount of anionic surfactant, silicone, the claimed pH, and method of masking acidic odor.

Maksimoski et al. and Nakatsu et al. do not cure the deficiency of Keys et al. because Maksimoski et al. and Nakatsu et al. do not describe a liquid acidic hair cosmetic composition (e.g., cleansing composition) comprising 8-50 wt.% of at least one anionic surfactant, silicone, the claimed pH, and the claimed method

Thus, Keys et al. alone or in combination with Maksimoski et al. and Nakatsu et al. do no make the claimed composition and method obvious.

Applicants request that the rejection be withdrawn.

A Notice of Allowance for all pending claims is requested.

Respectfully submitted,

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